

Method and Apparatus for Correcting Spherical Aberration of an Electron Beam

Abstract of Disclosure

Certain embodiments include a computed tomography system including an electron beam source for generating an electron beam, an ion clearing electrode for removing ions from the electron beam using electrical fields, an ion trap for allowing ions to accumulate in a downstream region of the electron beam so that the ions do not drift upstream, a beam tube for housing the ion trap, and a grounded tube conforming an effective electrical radius of the beam tube to the physical radius of the grounded tube to reduce spherical aberrations in the electron beam. Certain embodiments include a method for correcting spherical aberration in an electron beam including producing an electron beam, removing ions from the electron beam using electrical fields, and allowing ions to accumulate in a downstream portion of the electron beam using an ion trap and a grounded tube. The grounded tube adjusts a range of spherical aberration correction of the ion trap.

Figures